MBR3060

Axial Lead Rectifier

. . . employing the Schottky Barrier principle in a large area metal–to–silicon power diode. State–of–the–art geometry features epitaxial construction with oxide passivation and metal overlap contact. Ideally suited for use as rectifiers in low–voltage, high–frequency inverters, free wheeling diodes, and polarity protection diodes.

- Extremely Low V_f
- Low Power Loss/High Efficiency
- Highly Stable Oxide Passivated Junction
- Low Stored Charge, Majority Carrier Conduction

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16″ from case
- Shipped in plastic bags, 1000 per bag
- Available Tape and Reeled, 5000 per reel, by adding a "RL'' suffix to the part number
- Polarity: Cathode indicated by Polarity Band
- ESD Ratings: Machine Model = A
  Human Body Model = 2
- Marking: MBR3060

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_r	60	V
Average Rectified Forward Current T_L = 125°C ($R_{\theta JL}$ = 13°C/W, P.C. Board Mounting)	I_o	3.0	A
Non–Repetitive Peak Surge Current	I_{FSM}	125	A
Operating and Storage Junction Temperature Range (Reverse Voltage Applied)	T_J, T_{stg}	–65 to +150	°C
Peak Operating Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	150	°C

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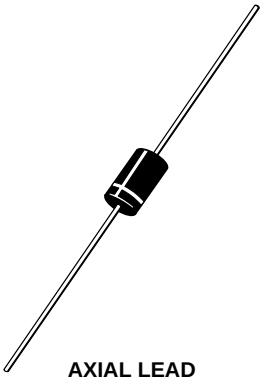
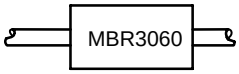
SCHOTTKY BARRIER RECTIFIER 3.0 AMPERES 60 VOLTS



AXIAL LEAD CASE 59–09 PLASTIC

MARKING DIAGRAM



MBR3060 = Device Code

ORDERING INFORMATION

Device	Package	Shipping
MBR3060	Axial Lead	1000 Units/Bag
MBR3060RL	Axial Lead	5000/Tape & Reel

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THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction–to–Lead (Note 1, see Note 3, Mounting Method 3)	$R_{\theta JL}$	13	°C/W
Thermal Resistance, Junction–to–Ambient (see Note 3, Mounting Method 3)	$R_{\theta JA}$	50	°C/W

ELECTRICAL CHARACTERISTICS (T_L = 25°C unless otherwise noted) (Note 1)

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 2) (I_f = 3.0 Amp), T_L = 25°C (I_f = 3.0 Amp), T_L = 100°C	V_f	 0.62 0.59	V
Maximum Instantaneous Reverse Current (Note 2) (V_r = 60 V), T_L = 25°C (V_r = 60 V), T_L = 100°C	I_r	 150 10	 μA mA

1. Lead Temperature reference is cathode lead at printed wiring board.
2. Pulse Test: Pulse Width = 300 μs, Duty Cycle = 2.0%.

TYPICAL CHARACTERISTICS

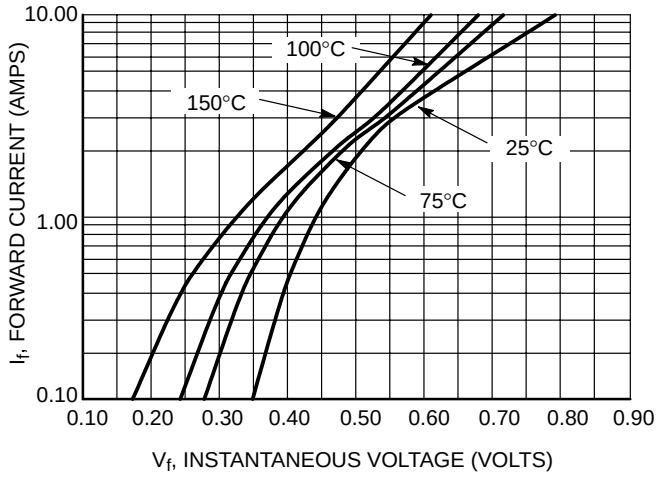


Figure 1. Typical Forward Voltage

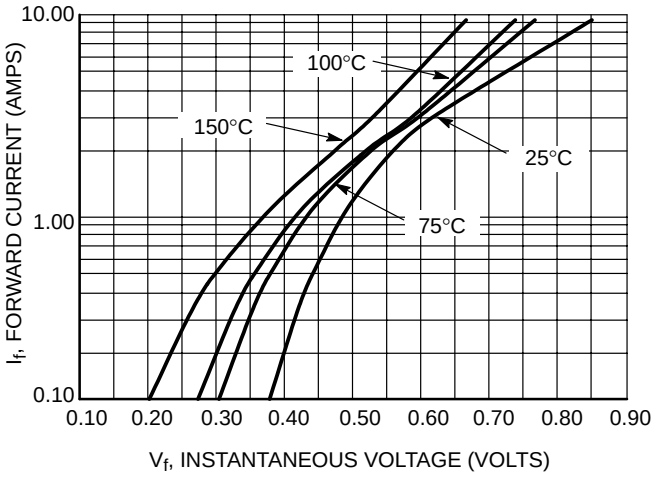


Figure 2. Maximum Forward Voltage

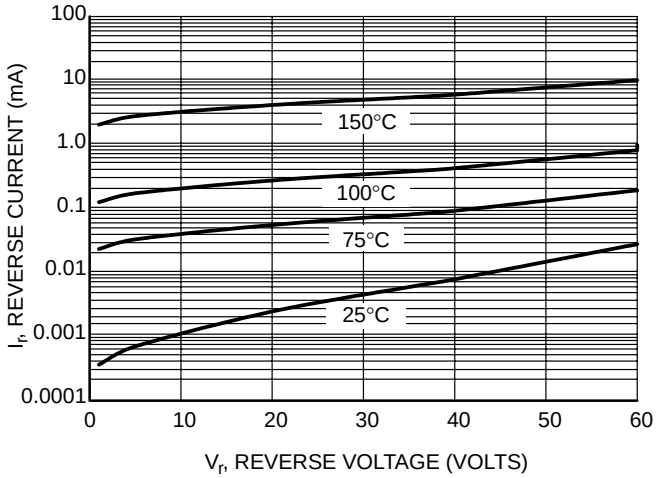


Figure 3. Typical Reverse Current

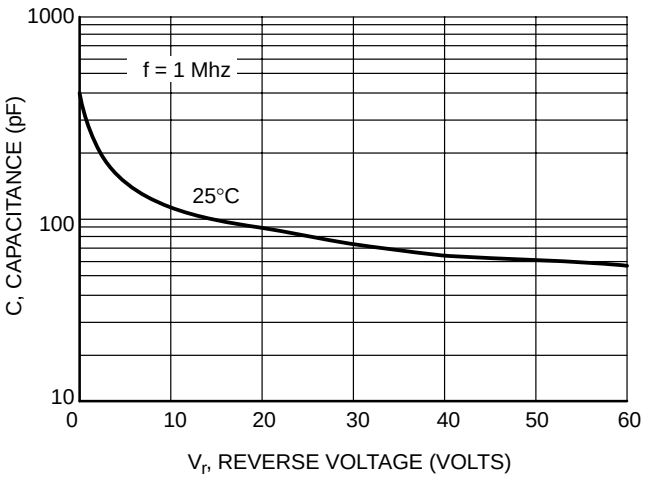


Figure 4. Typical Capacitance

TYPICAL CHARACTERISTICS

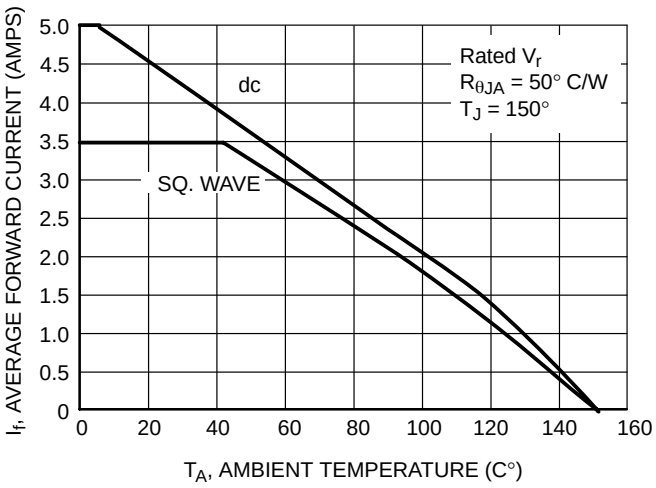


Figure 5. Current Derating – Ambient

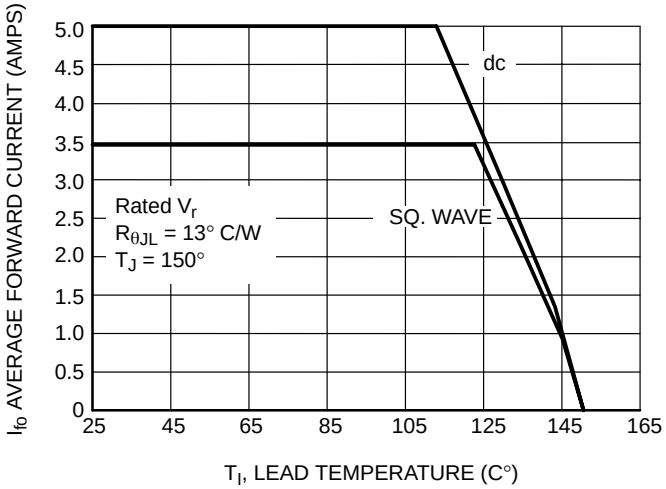


Figure 6. Current Derating – Lead

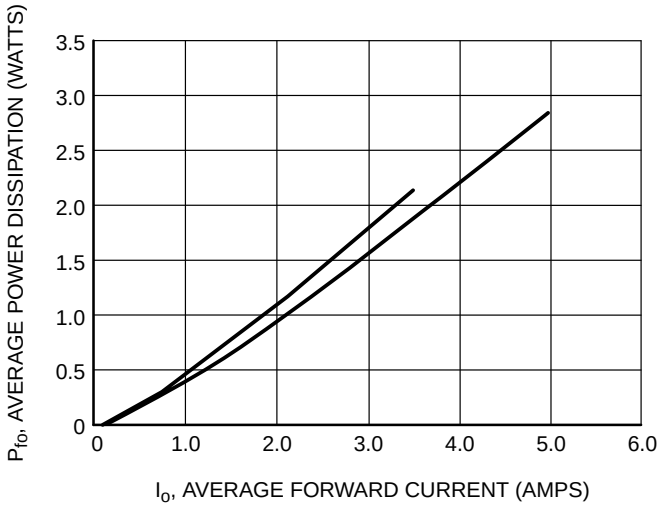


Figure 7. Forward Power Dissipation

NOTE 3 — MOUNTING DATA

Data shown for thermal resistance junction–to–ambient ($R_{\theta JA}$) and thermal resistance junction–to–lead ($R_{\theta JL}$) for the mountings shown is to be used as typical guideline values for preliminary engineering, or in case the tie point temperature cannot be measured.

TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR

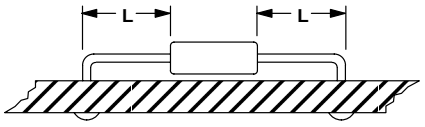
Mounting Method	Lead Length, L (in)				$R_{\theta JA}$
	1/8	1/4	1/2	3/4	
1	52	65	72	85	°C/W
2	67	80	87	100	°C/W
3	50				°C/W

TYPICAL VALUES FOR $R_{\theta JL}$ IN STILL AIR

Mounting Method	Lead Length, L (in)			$R_{\theta JA}$
	1/8	1/4	1/2	
1	15	23	37	°C/W
2	30	38	52	°C/W
3	13			°C/W

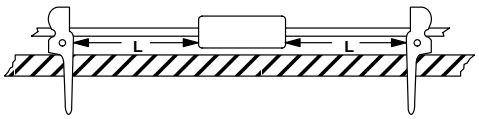
Mounting Method 1

P.C. Board with
1–1/2″ X 1–1/2″ copper surface.



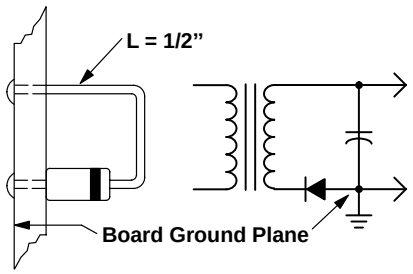
Mounting Method 2

Vector Push–In
Terminals T–28



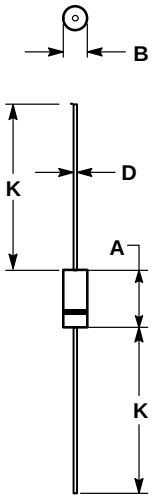
Mounting Method 3

P.C. Board with
1–1/2″ X 1–1/2″ copper surface.



PACKAGE DIMENSIONS

AXIAL LEAD
CASE 59–09
ISSUE R



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 59–04 OBSOLETE, NEW STANDARD 59–09.
4. 59–03 OBSOLETE, NEW STANDARD 59–10.
5. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO–41 OUTLINE SHALL APPLY.
6. POLARITY DENOTED BY CATHODE BAND.
7. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.228	0.299	5.80	7.60
B	0.102	0.142	2.60	3.60
D	0.028	0.034	0.71	0.86
K	1.000	---	25.44	---

Notes

Notes

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